

Borehole

22-03-04

Log Event A

Borehole Information

Farm : <u>BY</u>	Tank : <u>BY-103</u>	Site Number : <u>299-E33-211</u>
N-Coord : <u>46,081</u>	W-Coord : <u>53,207</u>	TOC Elevation : <u>648.01</u>
Water Level, ft :	Date Drilled : <u>12/5/1972</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

Borehole Notes:

The borehole was drilled with a cable tool drilling rig, and the casing is apparently ungrouted and unperforated.

The borehole is not exactly 100 ft deep; the logging tool's maximum depth was 101 ft.

Equipment Information

Logging System : <u>1</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	Logging Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>8/7/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>101.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>58.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>8/8/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>58.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Spectral Gamma-Ray Borehole
Log Data Report

Page 2 of 2

Borehole

22-03-04

Log Event A

Analysis Information

Analyst : D.C. Stromswold

Data Processing Reference : P-GJPO-1787

Analysis Date : 1/19/1996

Analysis Notes :

Verification spectra collected before and after the log runs showed that the logging tool was operating properly.

Gain drift during run 1 required two energy calibrations to maintain proper peak identification. Gain drift during run 2 was minimal, enabling a single energy calibration to be used during data processing.

Repeatability at the overlap logging section was within the calculated statistical uncertainties.

Correction factors for 0.25-in.-thick steel casing were used during data processing. No water correction was applied because the borehole was dry.

Cs-137, Co-60, and Sb-125 were the man-made contaminants detected in this borehole. Cs-137 was detected continuously from the surface to about 32 ft, and discontinuously below 32 ft. Co-60 was detected mainly in two intervals: one near 49 ft, and the other near 75 ft. Sb-125 detection was limited to a narrow zone from 50 to 52 ft.

The K-40 concentration increases below a depth of about 48 ft, which coincides with the bottom of the tank. The slight increases in the total gamma log near 46, 50, and 75 ft are due to Co-60 concentrations near these depths.

See the Tank Summary Data Report for BY-103 for additional log analysis.

Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.